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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/268,194	03/15/1999	HIROSHI YAMADA	58803-CCD	8059

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EXAMINER

CROSS, LATOYA I

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 09/30/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/268,194

Applicant(s)

YAMADA ET AL.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to Applicants' amendments filed on June 19, 2002 and entered as Paper No. 8. Claims 1-16 are pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Withdrawal of Rejections from Previous Office Action

- The rejection of claim 1 under 35 USC 103 over Yoshimura et al '633 is withdrawn in view of Applicants' argument that in Yoshimura, the ether alcohols evaporate and are not left in the composition to serve as color erasing components.
- The rejection of claims 1-5, 9, 11 and 12 under 35 USC 102(b) and the rejection of claim 10 under 35 USC 103 over Asano et al '671 is withdrawn in view of Applicants' argument that Asahi et al '671 teaches phthalates which perform irreversibly, unlike the phthalates of the instant invention which provide a reversible color change with temperature change.
- The objection of claims 6-8 and 13-16 is withdrawn, as the objection was improperly applied.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by the abstract of Japanese publication 62-299388 to Satomura et al (hereinafter Satomura et al '388).

Satomura et al '388 teaches a heat-sensitive recording material comprising an electron donating colorless dye and an electron accepting compound. Also included is a heat fusible compound such as diphenyl phthalate. Diphenyl phthalate may also serve as a color-erasing agent. In making the heat sensitive recording material, Satomura et al '388 teaches including a pigment material into the composition. While, Satomura et al '388 does not disclose how discoloration is triggered, the medium of Satomura et al '388 contains the same components as that instantly claimed by Applicants. Also, Satomura et al '388 teaches that the material is heat-sensitive meaning that medium changes color according to the presence or absence of heat. The properties and functions of the components are presumably inherent. See MPEP 2112.01.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be anticipated, within the meaning of 35 USC 102, in view of the teachings of Satomura et al '388.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1 and 4-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,981,115 to Furuya et al (hereinafter Furuya et al '115).

Furuya et al teach a reversible heat-sensitive recording medium comprising an electron donating coloring agent and an electron accepting color developer, wherein an image can be reversibly formed and erased as a result of heating and cooling. See abstract. At col. 26, lines 42-48, Furuya et al teach that an image erasure (color erasing) component may be including in the recording medium. Furuya et al teach that secondary and/or tertiary amine compounds have image erasing abilities. At col. 32, lines 60-67, Furuya et al '115 teach that a substrate, such as paper, films, etc. may be used to support the recording medium, containing the electron accepting agent and electron donating agent, as in claims 4 and 11. The recording medium is

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used in conjunction with several additional layers including an adhesive layer, an intermediate layer (barrier layer), an under-coat layer, a back-coat layer and a protective layer, as recited in claims 5-10 (col. 33, lines 1-5). With respect to claims 11 and 12, Furuya et al '115 teach the use of microencapsulated color developers (electron accepting compound) and a coloring agent (electron donating compound). See col. 26, lines 14-16. With respect to claim 13, Furuya et al teach that more than one color developer and coloring agent may be used. Regarding the addition of pigments, as recited in claim 14, Furuya et al teach the use of materials such as clay and silica (col. 28, lines 59-67).

Furuya et al differ from the instant invention in that 1) there is no explicit teaching of the use of a color erasing compound and 2) there is no teaching of the use of one layer containing the electron accepting component and another layer containing the electron donating compound.

With respect to the color erasing compound, Furuya et al teach the presence of an image erasure component, which functions similarly to the color erasing component. At col. 26, lines 42-67, Furuya et al teach that such components have image erasing abilities and promote image erasure while not compromising the stability of the recording medium to be maintained. It would have been obvious to one of ordinary skill in the art to use a color erasing component to control the color erasing ability of the recording medium.

With respect to the electron accepting and electron donating components being in separate layers, such is a design preference that has no bearing on the functioning of the medium. It would have been obvious to one of ordinary skill in the art to choose any suitable design to carry out the purpose of the medium. Absent evidence to contrary, Applicants' use of

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individual layers would not have substantial advantages over the use of one layer containing both components.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be obvious, within the meaning of 35 USC 103 in view of the teaching of Furuya et al.


8. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 703-305-7360. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 703-308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

LIC
September 25, 2002


Jill Warden
Supervisory Patent Examiner
Technology Center 1700